

ATTY. DKT. NO.: 030307-0227

U.S. Application No. 10/501,010

CLAIMS FOR DISCUSSION PURPOSES ONLY

1. (Currently Amended) A method of providing a correction for a slave instrument, the slave instrument measuring properties of an object by exposing the object to electromagnetic radiation in at least two spectral ranges and obtaining one or more object responses thereto, the responses being based on detecting at least one of attenuation, reflection and scattering of the electromagnetic radiation in or from the object by use of one or more detectors, the responses obtained in a form where they express properties either directly or via a transformation, said method of correction comprising:

obtaining, for a plurality of stable objects, a set of responses, comprising one or more pairs of related responses (Q_{low}^s and Q_{high}^s), representing measurements in the at least two spectral ranges performed with the slave instrument and a set of responses, comprising one or more pairs of related responses (Q_{low}^m and Q_{high}^m), representing measurements in the at least two spectral ranges performed with a master instrument;

wherein a pair of related responses (Q_{low}^m and Q_{high}^m) of the master instrument corresponds to each pair of related responses (Q_{low}^s and Q_{high}^s) of the slave instrument,

wherein each element in the corresponding pair of responses (Q_{low}^m and Q_{high}^m) of the master instrument corresponds to an element in each pair of responses (Q_{low}^s and Q_{high}^s) of the slave instrument,

determining, based on the sets of responses, a correcting function, the correcting function being a functional relationship between a ratio of related responses of the master instrument and a sum of a plurality of terms, each term being a product of a correcting coefficient (B_i) and powers of related responses (Q_{low}^s and Q_{high}^s) of the slave instrument, wherein each response is raised to a power being a positive or negative real number, or zero, thereby determining a first set of correcting coefficients ($B_0; B_1; B_2 \dots$); [[and]]

storing the first set of correcting coefficients ($B_0; B_1; B_2 \dots$) in a memory means included in or adapted for communication with a data processing unit included in or adapted for communication with the slave instrument wherein the first set of correcting coefficients are used to provide a correction for the slave instrument;

initially measuring at a manufacturing site the plurality of stable objects on the master instrument, thereby obtaining the set of responses (Q_{low}^m and Q_{high}^m) representing measurements performed with the master instrument; and

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initially storing at the manufacturing site the set of responses (Q_{low}^m and Q_{high}^m) initially measured as a set of constant values in the memory, the memory being accessible from the slave instrument, when measuring the corresponding stable objects on a slave instrument.

77 (New) A method of providing a correction for a slave instrument, the slave instrument measuring properties of an object by exposing the object to electromagnetic radiation in at least two spectral ranges and obtaining one or more object responses thereto, the responses being based on detecting at least one of attenuation, reflection and scattering of the electromagnetic radiation in or from the object by use of one or more detectors, the responses obtained in a form where they express properties either directly or via a transformation, said method of correction comprising:

obtaining, for a plurality of stable objects, a set of responses, comprising one or more pairs of related responses (Q_{low}^s and Q_{high}^s), representing measurements in the at least two spectral ranges performed with the slave instrument and a set of responses, comprising one or more pairs of related responses (Q_{low}^m and Q_{high}^m), representing measurements in the at least two spectral ranges performed with a master instrument, each stable object comprising at least a first and second different chemical compositions which are substantially stable, the first chemical compositions having X-ray response properties similar to adipose tissue, and the second chemical compositions having X-ray response properties similar to muscle tissue;

wherein a pair of related responses (Q_{low}^m and Q_{high}^m) of the master instrument corresponds to each pair of related responses (Q_{low}^s and Q_{high}^s) of the slave instrument,

wherein each element in the corresponding pair of responses (Q_{low}^m and Q_{high}^m) of the master instrument corresponds to an element in each pair of responses (Q_{low}^s and Q_{high}^s) of the slave instrument,

determining, based on the sets of responses, a correcting function, the correcting function being a functional relationship between a ratio of related responses of the master instrument and a sum of a plurality of terms, each term being a product of a correcting coefficient (B_i) and powers of related responses (Q_{low}^s and Q_{high}^s) of the slave instrument, wherein each response is raised to a power being a positive or negative real number, or zero, thereby determining a first set of correcting coefficients ($B_0; B_1; B_2 \dots$); [[and]]

storing the first set of correcting coefficients ($B_0; B_1; B_2 \dots$) in a memory means included in or adapted for communication with a data processing unit included in or adapted for communication with the slave instrument wherein the first set of correcting coefficients are used to provide a correction for the slave instrument.

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78. (New) A method of providing a correction for a slave instrument, the slave instrument measuring properties of an object by exposing the object to electromagnetic radiation in at least two spectral ranges and obtaining one or more object responses thereto, the responses being based on detecting at least one of attenuation, reflection and scattering of the electromagnetic radiation in or from the object by use of one or more detectors, the responses obtained in a form where they express properties either directly or via a transformation, said method of correction comprising:

obtaining, for a plurality of stable objects, a set of responses comprising one or more pairs of related responses (Q_{low}^s and Q_{high}^s) representing measurements in the at least two spectral ranges performed with the slave instrument [[and]];

providing, for the plurality of stable objects, a set of responses, comprising one or more pairs of related responses (Q_{low}^m and Q_{high}^m) representing measurements in the at least two spectral ranges performed with a master instrument;

wherein a pair of related responses (Q_{low}^m and Q_{high}^m) of the master instrument corresponds to each pair of related responses (Q_{low}^s and Q_{high}^s) of the slave instrument,

wherein each element in the corresponding pair of responses (Q_{low}^m and Q_{high}^m) of the master instrument corresponds to an element in each pair of responses (Q_{low}^s and Q_{high}^s) of the slave instrument,

determining, based on the sets of responses, a correcting function, the correcting function being a functional relationship between a ratio of related responses of the master instrument and a sum of a plurality of terms, each term being a product of a correcting coefficient (B_i) and powers of related responses (Q_{low}^s and Q_{high}^s) of the slave instrument, wherein each response is raised to a power being a positive or negative real number, or zero, thereby determining a first set of correcting coefficients ($B_0; B_1; B_2 \dots$); [[and]]

storing the first set of correcting coefficients ($B_0; B_1; B_2 \dots$) in a memory means included in or adapted for communication with a data processing unit included in or adapted for communication with the slave instrument wherein the first set of correcting coefficients are used to provide a correction for the slave instrument;

wherein the set of responses (Q_{low}^m and Q_{high}^m) representing measurements performed with the master instrument have initially been measured and stored as a set of constant values in the memory means, the memory means being accessible from the slave instrument, when measuring the corresponding stable objects on a slave instrument.